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EXAMINER	
THANGAVELU, KANDASAMY	
ART UNIT	**PAPER NUMBER**
2123	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/356,260	EIZENHOEFER ET AL.	
	Examiner	Art Unit	
	Kandasamy Thangavelu	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *26* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Introduction

1. This communication is in response to the Applicants' Amendment mailed on September 9, 2003. Claims 1, 3, 4, 6, 9, 11, 12, 15 and 17 of the application were amended. Claims 1-19 of the application are pending. This office action is made final.

Response to Amendments

2. Applicants' amendments, filed on September 9, 2003 have been considered. Applicants' arguments with respect to claim rejections under 35 USC 102 (e) and 103 (a) are not persuasive. In addition, in response to the applicants' amendment, new claim rejections have been included in this Office Action under 35 USC 112 First paragraph.

Information Disclosure Statement

3. Acknowledgment is made of the information disclosure statements filed on together with a copy of the patent. The patent has been considered.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. §112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

This is because claims 1and 3 include limitations "partitioning said bit sequence of signaling information and inserting said partitioned bit sequence of signaling information into frames other than the said individual frames"; and claims 9 and 11 include limitations "means for partitioning said bit sequence of signaling information (12; 22) and inserting and evaluating said partitioned bit sequence of information into and from frames other than the said individual frame". These imply that the same bit sequence of signaling information is partitioned and inserted as bit sequence of signaling information into frames other than the said individual frames. This is not described anywhere in the specification and therefore constitutes ***new material***. It is also contradictory to what is described in the specification as explained below.

Claim 1 states in part, "inserting a bit sequence of signaling information related to an individual frame into said individual frame, and

partitioning said bit sequence of signaling information and inserting said partitioned bit sequence of signaling information into frames other than the said individual frames".

Claim 3 states in part, "inserting a bit sequence of signaling information related to an individual frame into said individual frames, and

partitioning said bit sequence of signaling information and inserting said partitioned bit sequence of signaling information into frames other than the said individual frame".

The specification on Page 5, Lines 24-27 states, "the multi-frame signaling bits transmitted in three consecutive frames contain a quality measurement of the downlink as measured by the mobile part at reception thereof. For the measured quality of the downlink eight different levels can be assigned as three bits are used for multi-frame signaling".

The specification on Page 8, Lines 5-7 states, " The additional bit is generated by the coding mode means according to the used coding mode for the next frames."

From the above descriptions in the specification it is understood that the multi-frame signaling bits either contain either coding mode for the next frames or the quality measurement of the downlink. However, the specification does not describe anywhere that the bit sequence of signaling information in the individual frames is partitioned and inserted as signaling information into frames other than the said individual frames. In Fig. 2, the partitioned bits in Column 3 are not same as the coding mode bits in Col 2. For example, frame 0 has the mode 010 in Col 2, but frames 3-5 have 100 in Col 3; frame 3 has 010 in Col 2, but frames 6-8 have 110 in Col 3.

Claim 9 states in part, "means for inserting and evaluating a bit sequence of signaling information (12;22) into and from an individual frame to which said bit sequence relates, and

means for partitioning said bit sequence of signaling information (12;22) and inserting and evaluating said partitioned bit sequence of information into and from frames other than the said individual frames".

Claim 11 states in part, "means for inserting and evaluating a bit sequence of signaling information (12;22) into and from an individual frame to which said bit sequence relates, and

means for partitioning said bit sequence of signaling information (12;22) and inserting and evaluating said partitioned bit sequence of information into and from frames other than the said individual frame".

From the descriptions in the specification it is understood that the multi-frame signaling bits either contain either coding mode for the next frames or the quality measurement of the downlink. However, the specification does not describe anywhere that the bit sequence of signaling information in the individual frames is partitioned and inserted as signaling information into frames other than the said individual frames. In Fig. 2, the partitioned bits in Column 3 are not same as the coding mode bits in Col 2. For example, frame 0 has the mode 010 in Col 2, but frames 3-5 have 100 in Col 3; frame 3 has 010 in Col 2, but frames 6-8 have 110 in Col 3.

Claims rejected to but not specifically addressed are rejected to based on their dependency to a rejected claim.

Claim Interpretations

6. The applicants have modified the claims 1, 3, 4, 6, 9, 11, 12, 15 and 17 by incorporating the limitations:

"partitioning said bit sequence of signaling information and inserting said partitioned bit sequence of signaling information into frames other than the said individual frames" in claims 1 and 3;

"means for partitioning said bit sequence of signaling information (12;22) and inserting and evaluating said partitioned bit sequence of information into and from frames other than the said individual frame" in claims 9 and 11.

These imply that the same bit sequence of signaling information is partitioned and inserted as bit sequence of signaling information into frames other than the said individual frames. This is not described anywhere in the specification. Therefore, there is no basis in the specification for these limitations.

The specification on Page 5, Lines 24-27 states, "the multi-frame signaling bits transmitted in three consecutive frames contain a quality measurement of the downlink as measured by the mobile part at reception thereof. For the measured quality of the downlink eight different levels can be assigned as three bits are used for multi-frame signaling".

The specification on Page 8, Lines 5-7 states, " The additional bit is generated by the coding mode means according to the used coding mode for the next frames."

Therefore, for the purpose of art rejections, the examiner has interpreted that the bit sequence of signaling information that is partitioned and inserted as bit sequence of signaling

information into frames other than the said individual frames is different from the bit sequence of signaling information related to an individual frame that is inserted into an individual frame.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in-
>
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
>
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

8. Claims 1-2, 7-10 and 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by **Balachandran et al. (BA)** (US Patent 5,881,105).

8.1 **BA** teaches a system and method for the non-sequential transmission of control signals within a speech transmission. Specifically, as per Claim 1, **BA** teaches a method for signaling of information in a frame based transmission system, whereat the signaling information contains information necessary for the operation of the transmission system (Fig. 1; Col 3, Lines 34-66; Col 1, Line 65 to Col 2, Line 24); characterized by steps of

inserting a bit sequence of signaling information related to individual frames into the individual frames (Col 3, Lines 45-47 and Col 3, lines 60-66); the synchronization word inserted in each slot is related to that slot and to that frame and provides for frame synchronization; and

partitioning the bit sequence of signaling information and inserting the partitioned bit sequence of signaling information into frames other than the individual frames (Col 4, Lines 3-11 and Col 3, lines 60-66; Col 2, Lines 45-66); the FACCH carries the control signals which are 184 bits; the FACCH signals become 456 bits long after encoding; these are split into 8 bursts and sent through 8 separate frames; the FACCH carries the control signals in frames in which the user data/speech for the same user is not carried (Col 2, Lines 45-66).

8.2 As per Claim 2, **BA** teaches the method of Claim 1, as discussed above. **BA** also teaches that the inserted signaling information and the inserted partitioned signaling information are synchronized by using the given synchronization of the frame based transmission system (Col 3, Lines 45-47 and Col 3, lines 60-66).

8.3 As per Claim 7, **BA** teaches the method of Claim 1, as discussed above. **BA** also teaches that the transmission system is a radio network system (Fig. 3).

8.4 As per Claim 8, **BA** teaches the method of Claim 7, as discussed above. **BA** also teaches that radio network system is a GSM system (Col 1, Lines 34-37 and Col 3, lines 34-37).

8.5 As per Claim 9, **BA** teaches a frame based transmission system for signaling of information, whereat the signaling information contains information necessary for the operation of the transmission system, having means for coding and decoding of data, means for handling, the coded data in frame format, and means for transmitting and receiving the frames (Fig. 1; Col 3, Lines 34-66; Col 1, Line 65 to Col 2, Line 24); characterized by

means for inserting and evaluating a bit sequence of signaling information into and from an individual frame to which the bit sequence relates (Col 3, Lines 45-47 and Col 3, lines 60-66); the synchronization word inserted in each slot is related to that slot and to that frame and provides for frame synchronization; and

means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned bit sequence of information into and from frames other than the individual frames (Col 4, Lines 3-11 and Col 3, lines 60-66; Col 2, Lines 45-66); the FACCH carries the control signals which are 184 bits; the FACCH signals become 456 bits long after encoding; these are split into 8 bursts and sent through 8 separate frames; the FACCH carries the control signals in frames in which the user data/speech for the same user is not carried (Col 2, Lines 45-66).

8.6 As per Claim 10, **BA** teaches the system of Claim 9, as discussed above. **BA** also teaches that means for synchronizing are used to synchronize the inserted signaling information and the inserted partitioned signaling information according to the given synchronization of the frame based transmission system (Col 3, Lines 45-47 and Col 3, lines 60-66).

8.7 As per Claim 13, **BA** teaches the system of Claim 9, as discussed above. **BA** also teaches that the transmission system is a radio network system (Fig. 3).

8.8 As per Claim 14, **BA** teaches the system of Claim 13, as discussed above. **BA** also teaches that radio network system is a GSM system (Col 1, Lines 34-37 and Col 3, lines 34-37).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

10. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 3-4 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Balachandran et al. (BA)** (US Patent 5,881,105), in view of **Le Strat et al. (LS)** (US Patent 6,134,220).

11.1 As per Claim 3, **BA** teaches a method for signaling of information in a frame based transmission system, whereat the signaling information contains information necessary for the operation of the transmission system (Fig. 1; Col 3, Lines 34-66; Col 1, Line 65 to Col 2, Line 24); characterized by steps of:

inserting a bit sequence of signaling information related to an individual frame into the individual frames (Col 3, Lines 45-47 and Col 3, lines 60-66); the synchronization word inserted in each slot is related to that slot and to that frame and provides for frame synchronization; and

partitioning the bit sequence of signaling information and inserting the partitioned bit sequence of signaling information into frames other than the individual frame (Col 4, Lines 3-11 and Col 3, lines 60-66; Col 2, Lines 45-66); the FACCH carries the control signals which are 184 bits; the FACCH signals become 456 bits long after encoding; these are split into 8 bursts and sent through 8 separate frames; the FACCH carries the control signals in frames in which the user data/speech for the same user is not carried (Col 2, Lines 45-66).

BA does not expressly teach that the bit sequence of signaling information and the partitioned bit sequence of signaling information indicate a coding mode used for coding and decoding data in the transmission system. **LS** teaches that the bit sequence of signaling information and the partitioned bit sequence of signaling information indicate a coding mode used for coding and decoding data in the transmission system (Fig. 9; Col 7, Lines 40-42 and Col

14, Lines 60-63), so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell (Col 3, Lines 13-16) and to optimize the transmission quality (Col 7, Lines 16-19); **LS** specifies that the coding mode is sent through FACCAH; since **BA** teaches that FACCH is sent in successive frames, the coding mode could be sent in one frame or partitioned and sent in successive frames. It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to combine the method of **BA** with the method of **LS** so the bit sequence of signaling information and the partitioned bit sequence of signaling information indicated a coding mode used for coding and decoding data in the transmission system, so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell and to optimize the transmission quality.

10.2 As per Claim 4, **BA** teaches the method of Claim 1, as discussed above. **BA** does not teach that the inserted bit sequence of signaling information related to an individual frame indicates a coding mode used for coding and decoding data in the transmission system. **LS** teaches that the inserted bit sequence of signaling information related to an individual frame indicates a coding mode used for coding and decoding data in the transmission system (Fig. 9; Col 7, Lines 40-42 and Col 14, Lines 60-63), as the coding mode used depends on the quality of transmission required and the resources required (Col 4, Lines 41-50). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to combine the method of **BA** with the method of **LS,** so that the inserted bit sequence of signaling information related to an individual frame indicated a coding mode used for coding and decoding data in the

transmission system, as the coding mode used would depend on the quality of transmission required and the resources required.

BA does not teach that the partitioned bit sequence of signaling information inserted into different frames of the uplink is a quality measurement for the transmission. **LS** teaches that the partitioned bit sequence of signaling information inserted into different frames of the uplink is a quality measurement for the transmission (Col 7, Lines 44-48 and Col 14, Lines 60-63), as the quality information is used to select the coding mode to be used (Col 7, Lines 30-38). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to combine the method of **BA** with the method of **LS,** so the partitioned bit sequence of signaling information inserted into different frames of the uplink was a quality measurement for the transmission, as the quality information would be used to select the coding mode to be used.

BA does not teach that the partitioned bit sequence of signaling information inserted into frames other than the individual frame of the downlink indicates a coding mode used for coding and decoding data in the transmission system. **LS** teaches that the partitioned bit sequence of signaling information inserted into frames other than the individual frame of the downlink indicates a coding mode used for coding and decoding data in the transmission system (Col 7, Lines 40-42 and Col 14, Lines 60-63), so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell (Col 3, Lines 13-16) and to optimize the transmission quality (Col 7, Lines 16-19). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to combine the method of **BA** with the method of **LS,** so the partitioned bit sequence of signaling information inserted into frames other than the individual frame of the downlink indicates a coding mode used for coding

and decoding data in the transmission system, so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell and to optimize the transmission quality.

10.3 As per Claim 15, **BA** teaches the system of Claim 9, as discussed above. **BA** does not teach that the bit sequence of signaling information provided by the means for inserting and evaluating signaling information into and from an individual frame to which the bit sequence relates and the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned bit sequence of information into and from other than the individual frames indicate coding modes used by the means for coding and decoding. **LS** teaches that the bit sequence of signaling information provided by the means for inserting and evaluating signaling information into and from an individual frame to which the bit sequence relates and the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned bit sequence of information into and from other than the individual frames indicate coding modes used by the means for coding and decoding (Col 7, Lines 40-42 and Col 14, Lines 60-63), so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell (Col 3, Lines 13-16) and to optimize the transmission quality (Col 7, Lines 16-19). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the method of **LS** that included the bit sequence of signaling information provided by the means for inserting and evaluating signaling information into and from an

individual frame to which the bit sequence related and the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned bit sequence of information into and from other than the individual frames indicated coding modes used by the means for coding and decoding, so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell and to optimize the transmission quality.

10.4 As per Claim 16, **BA** and **LS** teach the system of Claim 15, as discussed above. **BA** does not teach that the system is a fixed part of the radio network system. **LS** teaches that the system is a fixed part of the radio network system (Col 7, Lines 28-29), as the fixed part of the system transmits to the mobile station information representative of the coding mode (Col 7, Lines 40-42). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the signaling information in the fixed part of **LS**, as the fixed part of the system transmits to the mobile station information representative of the coding mode.

10.5 As per Claim 17, **BA** teaches the system of Claim 9, as discussed above. **BA** does not teach that the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information into and from an individual frame to which the bit sequence relates indicate coding modes used by the means for coding and decoding. **LS** teaches that the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information into and from an individual frame to which

the bit sequence relates indicate coding modes used by the means for coding and decoding (Col 14, Lines 60-63), so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell (Col 3, Lines 13-16) and to optimize the transmission quality (Col 7, Lines 16-19). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **LS** that included the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information into and from an individual frame to which the bit sequence related indicated coding modes used by the means for coding and decoding, so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell and to optimize the transmission quality.

BA does not teach that the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned bit sequence of information into and from other than the individual frames indicate a quality measurement for transmission. **LS** teaches that the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned bit sequence of information into and from other than the individual frames indicate a quality measurement for transmission (Col 7, Lines 44-48 and Col 14, Lines 60-63), as the quality information is used to select the coding mode to be used (Col 7, Lines 33-38). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **LS** that included the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned

bit sequence of information into and from other than the individual frames indicated a quality measurement for transmission, as the quality information would be used to select the coding mode to be used.

10.6 As per Claim 18, **BA** and **LS** teach the system of Claim 17, as discussed above. **BA** does not teach that the system is a mobile part of the radio network system. **LS** teaches that the system is a mobile part of the radio network system (Col 7, Line 43), as the mobile part of the system transmits to the fixed part of the system, indication of transmission quality from base station to the mobile station (Col 7, Lines 44-48). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **LS** that included the signaling information indicating coding mode used for coding and decoding data and the quality measurement information, as the mobile part of the system transmits to the fixed part of the system, indication of transmission quality from base station to the mobile station.

10.7 As per Claim 19, **BA** and **LS** teach the system of Claim 18, as discussed above. **BA** does not teach that the quality measurement for transmission is evaluated by the mobile part of the radio network system, based on frames received from the fixed part of the radio network system. **LS** teaches that the quality measurement for transmission is evaluated by the mobile part of the radio network system, based on frames received from the fixed part of the radio network system (Col 7, Lines 44-46), as the quality information can then be sent to the fixed part for modifying the coding mode (Col 7, Lines 33-38). It would have been obvious to one of ordinary skill in the

art at the time of the Applicants' invention to modify the system of **BA** with the system of **LS** that made the quality measurement for transmission by the mobile part of the radio network system, based on frames received from the fixed part of the radio network system, as the quality information could then be sent to the fixed part for modifying the coding mode.

11. Claims 5, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Balachandran et al. (BA)** (US Patent 5,881,105), in view of **Dahlin (DA)** (US Patent 5,199,031).

11.1 As per Claim 5, **BA** teaches the method of Claim 1, as discussed above. **BA** does not teach that the inserted signaling information related to individual frames is channel coded separately. **DA** teaches that the inserted signaling information related to individual frames is channel coded separately (Fig. 2, Items 102 and 104; Col 4, Lines 14-35), as that allows manipulating the incoming data to carry out error detection and correction (Col 4, Lines 25-29). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the method of **BA** with the method of **DA,** so that the inserted signaling information related to individual frames is channel coded separately, as that would allow manipulating the incoming data to carry out error detection and correction.

11.2 As per Claim 11, **BA** teaches a frame based transmission system for signaling of information, whereat the signaling information contains information necessary for the operation of the transmission system, having means for coding and decoding of data, means for handling,

the coded data in frame format, and means for transmitting and receiving the frames (Fig. 1; Col 3, Lines 34-66; Col 1, Line 65 to Col 2, Line 24); characterized by

means for inserting and evaluating a bit sequence of signaling information (12;22) into and from an individual frame to which the bit sequence relates (Col 3, Lines 45-47 and Col 3, lines 60-66); the synchronization word inserted in each slot is related to that slot and to that frame and provides for frame synchronization; and

means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned bit sequence of information into and from frames other than the individual frame (Col 4, Lines 3-11 and Col 3, lines 60-66; Col 2, Lines 45-66); the FACCH carries the control signals which are 184 bits; the FACCH signals become 456 bits long after encoding; these are split into 8 bursts and sent through 8 separate frames; the FACCH carries the control signals in frames in which the user data/speech for the same user is not carried (Col 2, Lines 45-66).

BA does not teach that means for channel coding and decoding are used to channel code and decode the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information into and from the individual frame. **DA** teaches that means for channel coding and decoding are used to channel code and decode the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information into and from the individual frame (Fig. 2, Items 102 and 104; Col 4, Lines 14-35), as that allows manipulating the incoming data to carry out error detection and correction (Col 4, Lines 25-29). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **DA,**

so that means for channel coding and decoding were used to channel code and decode the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information into and from the individual frame, as that would facilitate manipulating the incoming data to carry out error detection and correction.

11.3 As per Claim 12, **BA** teaches the system of Claim 9, as discussed above. **BA** does not teach that the means for channel coding are used to channel code and decode the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned bit sequence of information into and from other than the individual frames. **DA** teaches that the means for channel coding are used to channel code and decode the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned bit sequence of information into and from other than the individual frames (Fig. 2, Items 102 and 104; Col 4, Lines 14-35), as that allows manipulating the incoming data to carry out error detection and correction (Col 4, Lines 25-29). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **DA,** so that the means for channel coding are used to channel code and decode the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information and inserting and evaluating the partitioned bit sequence of information into and from other than the individual frames, as that would facilitate manipulating the incoming data to carry out error detection and correction.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Balachandran et al. (BA)** (US Patent 5,881,105), in view of **Dahlin (DA)** (US Patent 5,199,031), and further in view of **Alanara (AL)** (US Patent 6,286,122).

12.1 As per Claim 6, **BA** teaches the method of Claim 1, as discussed above. **BA** does not teach that that the partitioned bit sequence of signaling information inserted into frames other than the individual frame is channel coded together with data contained in the other frames. **AL** teaches that the data word and signal word could be interleaved and sent in one slot (Col 4, Lines 22-27), so unused portion of a slot containing signaling word could be used to transmit data word (Col 4, Lines 22-27). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the method of **BA** with the method of **AL,** so that the data word and signal word could be interleaved and sent in one slot, as that would facilitate using unused portion of a slot containing signaling word to transmit data word.

DA teaches that the partitioned bit sequence of signaling information inserted into different frames is channel coded together with data contained in the different frames (Fig. 2, Items 102 and 104; Col 4, Lines 14-35), as that allows manipulating the incoming data to carry out error detection and correction (Col 4, Lines 25-29). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the method of **BA** and **AL** with the method of **DA,** so that the partitioned bit sequence of signaling information inserted into different frames is channel coded together with data contained in the different frames, as that would facilitate manipulating the incoming data to carry out error detection and correction.

Arguments

13.1 As per the applicants' argument that "the examiner has assumed that the signaling information in the individual frames and the partitioned signaling information in other than the individual frames could be different signaling information; the examiner's objections can be addressed by amending the claims to include the limitation that the signaling information in the individual frames and the partitioned signaling information in other than the individual frames are the same signaling information; Claims 1, 3, 9 and 11 are amended to specify that a bit sequence of signaling information related to an individual frame is inserted into an individual frame, and said bit sequence of signaling information is partitioned and inserted into frames other than the said individual frames; support for this amendment is found in Fig. 2 of the application and portion of the specification that describes Fig. 2 (e.g. page 6, Lines 17-27)", the examiner respectfully disagrees.

The specification does not describe anywhere that the bit sequence of signaling information in the individual frames is partitioned and inserted as signaling information into frames other than the said individual frames. In Fig. 2, the partitioned bits in Column 3 are not same as the coding mode bits in Col 2. For example, frame 0 has the mode 010 in Col 2, but frames 3-5 have 100 in Col 3; frame 3 has 010 in Col 2, but frames 6-8 have 110 in Col 3.

13.2 As per the applicants' argument that "the examiner holds the view that Fig. 2 does not describe an embodiment in which the signaling information in the individual frames and the signaling information in the other than individual frames are related; the examiner observes that

in Fig. 2, the signaling information in other than the individual frames is future coding mode in the downlink frames and quality measurement information in the uplink frames; from this the examiner concludes that the information in the individual and the other than the individual frames are not the same; as recited in the applicants' claims, the bit sequence in the individual frame is the same as that partitioned and placed in the other frames; referring to Fig. 2, in the individual frame containing the bit sequence, the bit sequence is used as an actual coding mode for that frame; the partitioned bits in other frames ... they are the future coding modes; therefore, while the function of the bits in each frame may be different, the bits themselves are the same", the examiner request the applicants' attention to the conflicting nature of the above argument. On the one hand the applicants argue that the individual frame has the actual coding mode and the other frames have future coding modes; on the other hand they argue that the bit sequence in the individual frame and the other frames is the same.

13.3 As per the applicants' argument that "neither Balachandran et al. or Balachandran et al. in view of Le Strat disclose or suggest partitioning a bit sequence of signaling information that relates to an individual frame and inserting and evaluating this bit sequence of information into and frames other than the individual frame", the examiner request the applicants' attention to the fact that the applicants do not disclose or suggest "inserting a bit sequence of signaling information related to an individual frame into said individual frame, and partitioning said bit sequence of signaling information and inserting said partitioned bit sequence of signaling information into frames other than the said individual frames" as discussed in Paragraph 5 above.

Conclusion

ACTION IS FINAL – NECESSIATED BY AMENDMENT

14. Applicant's amendments necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 703-305-0043. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on (703) 305-9704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

K. Thangavelu
Art Unit 2123
November 20, 2003